

## BIOENGINEERING NANOTECHNOLOGY INITIATIVE

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National Cancer Institute  
National Center for Research Resources  
National Eye Institute  
National Human Genome Research Institute  
National Heart, Lung, and Blood Institute  
National Institute on Aging  
National Institute on Alcohol Abuse and Alcoholism  
National Institute of Allergy and Infectious Diseases  
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National Institute of Child Health and Human Development  
National Institute on Drug Abuse  
National Institute on Deafness and Other Communication Disorders  
National Institute of Dental and Craniofacial Research  
National Institute of Diabetes and Digestive and Kidney Diseases  
National Institute of Environmental Health Sciences  
National Institute of General Medical Sciences  
National Institute of Mental Health  
National Institute of Neurological Disorders and Stroke  
National Library of Medicine

Application Receipt Dates: April 1, August 1, and December 1 in the years 2000, 2001, and 2002.

### PURPOSE

This Program Announcement (PA), issued as an initiative of the trans-NIH Bioengineering Consortium (BECON), invites grant applications for Small Business Innovation Research (SBIR) projects on nanotechnologies useful to biomedicine. Nanotechnology is defined as the creation of functional materials, devices and systems through control of matter at the scale of 1 to 100 nanometers, and the exploitation of novel properties and phenomena at the same scale. Nanotechnology is emerging as a field critical for enabling essential breakthroughs that may have

tremendous potential for affecting biomedicine. Moreover, nanotechnologies developed in the next several years may well form the foundation of significant commercial platforms.

In recognition of the nascence of this area, the duration and amounts of individual grants awarded under this PA may be greater than those routinely allowed under the SBIR program. Few small businesses possess the highly specialized resources needed for nanoengineering. Therefore, this PA encourages team approaches to research in the belief that a synergistic blend of expertise and resources may be needed to allow for stronger partnerships between the small businesses and other entities in Phase I than can be developed with the funds usually available through this program. Applications are encouraged from teams of investigators from commercial, academic and other sectors of the research community. Partners to the small businesses may play important roles in these projects and may receive appropriate support for their efforts. In addition to requiring collaboration from various sectors, it is expected that this initiative will require expertise from a variety of disciplines, including engineering, chemistry, physics, material science, engineering, and biology.

This PA will remain in effect for three years (a total of 9 receipt dates), at which time this initiative will be evaluated and a decision will be made as to whether the initiative will continue.

This PA must be read in conjunction with the Omnibus Solicitation of the Public Health Service (Omnibus Solicitation) for Phase I SBIR Grant Applications (PHS 2000-2) and the instructions for Phase II Grant Applications revised March 1998. All instructions and information in these documents also apply to applications submitted in response to this PA except where otherwise noted below.

## HEALTHY PEOPLE 2000

The Public Health Service (PHS) is committed to achieving the health promotion and disease prevention objectives of "Healthy People 2000," a PHS-led national activity for setting priority areas. This Program Announcement, Bioengineering Nanotechnology Initiative, is related to many priority areas. Potential applicants may obtain a copy of "Healthy People 2000" at <http://odphp.osophs.dhhs.gov/pubs/hp2000/>

## ELIGIBILITY

Eligibility requirements are described in the Omnibus Solicitation.

## MECHANISM OF SUPPORT - PHASE I

Phase I applications in response to this PA will be funded as Phase I SBIR Grants (R43) with modifications as described below. Responsibility for the planning, direction, and execution of the proposed research will be solely that of the applicant. Applications for Phase I grants should be prepared following the directions for Phase I SBIR applications as described in the Omnibus Solicitation. The Omnibus Solicitation is available on the Internet at:  
<http://grants.nih.gov/grants/funding/sbir1/SBIR.htm>.

A limited number of hard copies of the Omnibus Solicitation are available from:

PHS SBIR/STTR Solicitation Office  
13685 Baltimore Avenue  
Laurel, MD 20707-5096  
Telephone: (301) 206-9385  
FAX: (301) 206-9722  
Email: [a2y@cu.nih.gov](mailto:a2y@cu.nih.gov)

### o Project Period and Amount of Award

Because the duration and cost of research to develop nanotechnologies is likely to exceed that routinely awarded for SBIR grants, well-justified Phase I applications under this PA will be considered with a project period up to two years and a budget not to exceed a total cost of \$400,000 (i.e., an average of \$200,000 per year).

### o Consultant and contractual costs

Because the resources required for nanoengineering are relatively scarce, highly specialized, and multidisciplinary, the total amount of consultant costs and contractual costs requested by applicants may exceed the statutory guidelines. Requests in excess of the guidelines must be fully justified.

### o Page Limitations

The 25-page limitation for Phase I applications applies (see Omnibus Solicitation).

## MECHANISM OF SUPPORT - PHASE II

Phase II applications in response to this PA will be awarded as Phase II SBIR grants (R44) with modifications as described below. Phase II applications in response to this PA will only be accepted as competing continuations of previously funded NIH Phase I SBIR awards. The previously funded Phase I award need not have been awarded under this PA but the Phase II proposal must be a logical extension of the Phase I research.

Applications for Phase II awards should be prepared following the instructions for NIH Phase II applications in the Omnibus Solicitation, which may be accessed electronically at <http://grants.nih.gov/grants/funding/sbir2/index.htm>.

- o Project Period and Amount of Award

Because the duration and cost of research to develop nanotechnologies is likely to exceed that routinely awarded for SBIR grants, well-justified Phase II applications under this PA will be considered with a project period up to three years and a budget not to exceed a total cost of \$1,200,000 (i.e., an average of \$400,000 for each of three years).

- o Consultant and Contractual Costs

Because the resources required for nanoengineering are relatively scarce, highly specialized, and multidisciplinary, the total amount of consultant costs and contractual costs requested by applicants may exceed the statutory guidelines. Requests in excess of the guidelines must be fully justified.

The Fast-Track initiative will not be utilized under this PA.

## MECHANISM OBJECTIVES

The SBIR program consists of the following three phases:

- o Phase I

The objective of Phase I is to establish the technical merit and feasibility of the proposed research, or research and development efforts, and to determine the quality of performance of the small business grantee organization prior to providing further federal support in Phase II.

- o Phase II

The objective of this phase is to continue the research or research and development efforts initiated in Phase I.

- o Phase III

The objective of this phase, where appropriate, is for the small business concern to pursue the commercialization of the results of the research or research and development funded in Phases I and II. Phase III occurs without SBIR funding.

## RESEARCH OBJECTIVES

### Background

Nearly half a century ago, the finest minds in physics disagreed as to whether it would ever be possible to manipulate individual atoms and electrons. Today, the amount of nanoscale science and engineering is exploding because of the availability of new investigative tools. These new analytical tools are capable of probing the nanometer world and will make it possible to characterize chemical and mechanical properties of cells, discover novel phenomena and processes, and provide science with a wide range of tools, materials, devices, and systems with unique characteristics. For example, complementing optical traps and tweezers, nanoscale carbon cones are ideal probe tips for scanning microscopy, and could be used to better understand the structure of biomolecules. Carbon nanotubes with bioactive tips could be used to serve as chemically-selective grips for particular, individual molecules. This capability could be used, in turn, to manipulate and observe directly interactions between individual molecules (e.g., proteins) and to detect different biological agents and pathogens thus revolutionizing the use of probe microscopy in chemistry and biology. Indeed, by using diverse tools and concepts such as scanning probe manipulators, nanolithography, logic circuits based on quantum dots, and self-assembling molecular properties, it should be possible to arrange individual atoms and molecules in space with great precision, leading to the fabrication of truly smart biosensors.

On the other hand, complex biological systems provide models from which to design components that can be brought together to form three-dimensional nanostructured systems. For example, the properties of DNA to undergo highly controlled and hierarchical assembly makes it ideal for applications in nanotechnology such as molecular sieves, or scaffolds for the assembly of

molecular electronic components. Likewise, eukaryotic rotary motors based on ATPase could be employed as generic engines driving other nanodevices for purposes such as highly directed delivery of drugs or other agents.

Eventually, by coupling advances in the knowledge of living systems with the unique capabilities imparted by nanostructures and materials, it may be possible to detect and intervene in disease states using biologically inspired solutions. Integration of biocompatible materials with fluidics, optics, mechanical and electronic components, all at micro- to nano- scale, will enable development of implantable noninvasive sensing systems for the detection and prevention of disease at the earliest stages of its development. Controlled release delivery systems will make possible delivery of both conventional and new, nanostructured drugs at targeted specific sites in the body, while nanoscale chemical and topographical details on the surface of implantable materials will mediate their reaction with the body. Nanotechnology promises scientific and commercial opportunities that are virtually unimaginable at this time.

#### Research Topics

Examples of general research topics that would be considered responsive to this PA are listed below. This is not meant to be an exhaustive, exclusive or delimiting set of topics, rather these merely represent illustrations of projects that would be considered relevant to this PA.

- o Nanoplumbing components such as valves, microfluidic channels, and motors (e.g., to be used as pumps)
- o Logic circuits based on quantum dots, which carry out particular computing functions without current
- o Development and improvement of techniques based on new principles for probing biological properties and phenomena not well understood at the nanometer scale and for characterizing nanoscale materials
- o Development of fluorescent probes at the nanometer scale for monitoring biochemical processes on the surface and inside a cell in health and disease
- o Creation of "smart" nanostructured biocompatible materials. Approaches may include self-assembling techniques and supramolecular chemistry for building up functional nanostructures and for modifying and patterning material surface texture

- o Development of nanofabricated barriers to prevent rejection of implantable materials
- o Development of nanoparticles and nanospheres that enable controlled released of therapeutic agents, antibodies, genes and vaccines into targeted cells
- o Development of sensor technologies for detection and analysis of biologically relevant molecular and physical targets in samples from blood, saliva and other body fluids, or for use in the research laboratory (purified samples), clinical specimens and in the living body.

#### INCLUSION OF WOMEN AND MINORITIES IN RESEARCH INVOLVING HUMAN SUBJECTS

It is the policy of the NIH that women and members of minority groups and their subpopulations must be included in all NIH supported biomedical and behavioral research projects involving human subjects, unless a clear and compelling rationale and justification is provided that inclusion is inappropriate with respect to the health of the subjects or the purpose of the research. This policy results from the NIH Revitalization Act of 1993 (Section 492B of Public Law 103-43).

All investigators proposing research involving human subjects should read the "NIH Guidelines For Inclusion of Women and Minorities as Subjects in Clinical Research," which have been published in the Federal Register of March 28, 1994 (FR 59 14508-14513) and in the NIH Guide for Grants and Contracts, Vol. 23, No. 11, March 18, 1994 available on the web at the following URL address: <http://grants.nih.gov/grants/guide/notice-files/not94-100.html>

#### INCLUSION OF CHILDREN AS PARTICIPANTS IN RESEARCH INVOLVING HUMAN SUBJECTS

It is the policy of NIH that children (i.e., individuals under the age of 21) must be included in all human subjects research, conducted or supported by the NIH, unless there are scientific and ethical reasons not to include them. This policy applies to all initial (Type 1) applications submitted for receipt dates after October 1, 1998.

All investigators proposing research involving human subjects should read the "NIH Policy and Guidelines on the Inclusion of Children as Participants in Research Involving Human Subjects" that was published in the NIH Guide for Grants and Contracts, March 6, 1998, and is available at the following URL address: <http://grants.nih.gov/grants/guide/notice-files/not98-024.html>

Investigators also may obtain copies of these policies from the program staff listed under INQUIRIES. Program staff may also provide additional relevant information concerning the policy.

## APPLICATION PROCEDURES

Applicants should follow the instructions for SBIR Phase I or Phase II submission with the modifications as noted in this PA. Potential applicants are strongly encouraged to contact program staff for pre-application guidance and/or for more specific information on the research topics described in this PA.

### Mailing Instructions

For purposes of identification and processing, the title and number of this PA must be shown in item 2 on the face page of the SBIR Phase I applications and in item 1A of the face page of Phase II grant applications (i.e., "BIOENGINEERING NANOTECHNOLOGY INITIATIVE," PA-00-018).

Follow the mailing instructions in the Omnibus Solicitation for Phase I applications. Follow the mailing instructions in the Phase II application package for Phase II applications.

## REVIEW CONSIDERATIONS

### Review Procedures

Applications will be assigned on the basis of established PHS referral guidelines. Upon receipt, applications will be reviewed for completeness by the NIH Center for Scientific Review. Incomplete applications will be returned to the applicant without further consideration.

Applications will be reviewed for scientific and technical merit by review groups convened by the Center for Scientific Review, NIH, in accordance with the standard NIH peer review procedures. As part of the initial merit review, all applications will receive a written critique and undergo a process in which only those applications deemed to have the highest scientific merit, generally the top half of the applications under review, will be discussed, assigned a priority score, and receive a second level review by the appropriate national advisory council.

### Review Criteria



Review criteria are described in the Omnibus Solicitation. The Phase I application should specify clear, measurable goals (milestones) that should be achieved prior to initiating Phase II. Failure to provide clear, measurable goals may be sufficient reason for the study section to judge the application non-competitive.

#### AWARD CRITERIA

The following will be considered when making funding decisions: quality of the proposed project as determined by peer review, program balance among research areas of the program announcement, the availability of funds, and the commercialization status where the small business concern has received more than 15 Phase II awards in the prior five (5) fiscal years, if applicable (see this application requirement under "Prior SBIR Phase II Awards" found in the "Introduction and Application Instructions" portion of the Omnibus Solicitation).

Applications will compete for available funds with all other favorably recommended SBIR applications. Note that applicants may achieve all Phase I goals and milestones and still not receive Phase II funding.

#### INQUIRIES

Written and telephone inquiries are encouraged. The opportunity to clarify any issues or questions from potential applicants is welcome.

Inquiries regarding programmatic issues may be directed to:

NCI - Carol Dahl, Ph.D.; National Cancer Institute; Building 31, Room 11A03, MSC 2590; Bethesda, MD 20892-2590; Telephone: (301) 496-1550; FAX: (301) 496-7807; Email: [cd41x@nih.gov](mailto:cd41x@nih.gov)

NCRR - Richard Dubois, Ph.D.; Biomedical Technology; National Center for Research Resources; 6705 Rockledge Drive, Room 61060, MSC 7965; Bethesda, MD 20892-7965; Telephone: (301) 435-0755; FAX: (301) 480-3659; Email: [rickard@ncrr.nih.gov](mailto:rickard@ncrr.nih.gov)

NEI - Ralph J. Helmsen, Ph.D.; Research Resources Officer; National Eye Institute; Executive Plaza South, Suite 350; 6120 Executive Boulevard, MSC 7164; Bethesda, MD 20892-7164; Telephone: (301)-496-5301; FAX: (301)-402-0528; Email: [rh27v@nih.gov](mailto:rh27v@nih.gov)

NHGRI - Jeffery A. Schloss, Ph.D.; Division of Extramural Research; National Human Genome Research Institute; Building 31, Room B2B07, MSC 2033; Bethesda, MD 20892-2033; Telephone: (301) 496-7531; FAX: (301) 480-2770; Email: [jeff\\_schloss@nih.gov](mailto:jeff_schloss@nih.gov)

NHLBI - John T. Watson, Ph.D.; Acting Deputy Director; National Heart, Lung, and Blood Institute; 9000 Rockville Pike, Room 5A49; Bethesda, MD 20892; Telephone: (301) 435-0513; FAX: (301) 402-3686; Email: [jw53f@nih.gov](mailto:jw53f@nih.gov)

NIA - Evan Hadley, M.D.; Geriatrics; National Institute on Aging; Gateway Building, Suite 3E327, MSC 9205; Bethesda, MD 20892-9205; Telephone: (301) 435-3044; FAX: (301) 402-1784; Email: [hadleye@exmur.nia.nih.gov](mailto:hadleye@exmur.nia.nih.gov)

NIAAA - Antonio Noronha, Ph.D.; Division of Basic Research; National Institute on Alcohol Abuse and Alcoholism; 6000 Executive Blvd., Suite 402; Bethesda, MD 20892-7003; Telephone: (301) 443-7722; Fax: (301) 594-0673; Email: [anoronha@willco.niaaa.nih.gov](mailto:anoronha@willco.niaaa.nih.gov)

NIAID - Vicki Seyfert, Ph.D.; National Institute of Allergy and Infectious Diseases; 6003 Executive Boulevard, Room 4A21; Rockville, MD 20852; Telephone: (301) 496-7551; FAX: (301) 402-2571; Email: [vs62y@nih.gov](mailto:vs62y@nih.gov)

NIAMS - James S. Panagis, M.D., M.P.H.; Musculoskeletal Diseases Branch; National Institute of Arthritis and Musculoskeletal and Skin Diseases; 6500 Center Drive, Room 5AS-37K; Bethesda, MD 20892-6500; Telephone: (301) 594-5055; FAX: (301) 480-4543; Email: [jp149d@nih.gov](mailto:jp149d@nih.gov)

NICHD - Louis A. Quatrano, Ph.D.; National Center for Medical Rehabilitation Research; National Institute of Child Health and Human Development; Building 61E, Room 2A03; Bethesda, MD 20892-7510; Telephone: (301) 402-2242; FAX: (301) 402-0832; Email: [lq2n@nih.gov](mailto:lq2n@nih.gov)

NIDA - Thomas G. Aigner, Ph.D.; Division of Basic Research; National Institute on Drug Abuse; 6001 Executive Boulevard, Room 4282, MSC 9555; Bethesda, MD 20892-9555; Telephone: (301) 443-6975; FAX: (301) 594-6043; Email: [ta17r@nih.gov](mailto:ta17r@nih.gov)

NIDCD - Lynn E. Luethke, Ph.D.; National Institute on Deafness and Other Communication Disorders; 6120 Executive Boulevard, MSC 7180; Bethesda, MD 20892-7180; Telephone: (301) 402-3458; FAX: (301) 402-6251; Email: [lynn\\_luethke@nih.gov](mailto:lynn_luethke@nih.gov)

NIDDK - Joan T. Harmon, Ph.D.; Division of Diabetes, Endocrinology, and Metabolic Diseases; National Institute of Diabetes and Digestive and Kidney Diseases; 45 Center Drive, Room 5AN-18G, MSC 6600; Bethesda, MD 20892-6600; Telephone: (301) 594-8813; FAX: (301) 480-3503; Email: [HarmonJ@extra.niddk.nih](mailto:HarmonJ@extra.niddk.nih)

NIDCR - Eleni Kousvelari, D.D.S., D.Sc.; Chief - Biomaterials, Biomimetics, and Tissue Engineering Branch; National Institute of Dental and Craniofacial Research; Natcher Building, Room 4AN 18A, MSC 6402; Bethesda, MD 20892-6402; Telephone: (301) 594-2427; FAX: (301) 480-8318; Email: [kousvelari@de45.nidr.nih.gov](mailto:kousvelari@de45.nidr.nih.gov)

NIEHS - Dr. Jerrold Heindel; Division of Extramural Research and Training; National Institute of Environmental Health Sciences; PO Box 12233, Mail Drop EC-23; Research Triangle Park, NC 27709; Telephone: (919) 541-0781; FAX: (919) 541-5064; Email: [heindelj@niehs.nih.gov](mailto:heindelj@niehs.nih.gov)

NIGMS - Warren Jones, Ph.D.; Division of Pharmacology, Physiology and Biological Chemistry; National Institute of General Medical Sciences; 45 Center Drive, Room 2AS-43H, MSC 6200; Bethesda, MD 20892-6200; Telephone: (301) 594-5938; FAX: (301) 480-2802; Email: [jonesw@nigms.nih.gov](mailto:jonesw@nigms.nih.gov)

NIMH - Michael F. Huerta, Ph.D.; Associate Director, Division of Neuroscience and Basic Behavioral Science; National Institute of Mental Health; 6001 Executive Boulevard, Room 7202, MSC 9645; Bethesda, MD 20892-9645; Telephone: (301) 443-3563; FAX: (301) 443-1731; Email: [mhuerta@helix.nih.gov](mailto:mhuerta@helix.nih.gov)

NINDS - William Heetderks, M.D., Ph.D.; Division of Stroke, Trauma, and Neurodegenerative Disorders; National Institute of Neurological Disorders and Stroke; Neuroscience Center, Room 2207; Bethesda, MD 20892; Telephone: (301) 496-1447; FAX: (301) 480-1080; Email: [Heet@nih.gov](mailto:Heet@nih.gov)

NLM - Peter Clepper; Program Officer; National Library of Medicine; 6705 Rockledge Drive, Suite 301; Bethesda, MD 20871; Telephone: (301) 594-4882; FAX: (301) 402-2952; Email: [clepper@nlm.nih.gov](mailto:clepper@nlm.nih.gov)

Direct inquiries regarding fiscal matters to:

NCI - Bill Wells; Grants Administration Branch; National Cancer Institute;  
6120 Executive Boulevard, Room 243, MSC 7150; Bethesda, MD 20892-7150;  
Telephone: (301) 496-7800; FAX: (301) 496-8601; Email: [wellsw@gab.nci.nih.gov](mailto:wellsw@gab.nci.nih.gov)

NCRR - Joellen Harper; Office of Grants Management; National Center for  
Research Resources; 6705 Rockledge Drive, Room 6086, MSC 7965; Bethesda, MD  
20892-7965; Telephone: (301) 435-0844; FAX: (301) 402-3777; Email:  
[harperj@ncrr.nih.gov](mailto:harperj@ncrr.nih.gov)

NEI – William Darby, Grants Management Officer; National Eye Institute; 6120 Executive  
Boulevard, Suite 350, MSC 7164; Bethesda, MD 20892-7164; Telephone: (301) 496-5884; FAX:  
(301) 402-0528

NHGRI - Jean Cahill; Grants Management Office; National Human Genome Research Institute;  
Building 31, Room B2B34; 31 Center Drive, MSC 2030; Bethesda, MD 20892-2030; Telephone:  
(301) 402-0733; FAX: (301) 402-1951; Email: [jean\\_cahill@nih.gov](mailto:jean_cahill@nih.gov)

NHLBI - Jane Davis; National Heart, Lung, and Blood Institute; 6701 Rockledge Drive, Room  
7174; Bethesda, MD 20892; Telephone: (301) 435-0166; FAX: (301) 480-3310; Email:  
[jd53f@nih.gov](mailto:jd53f@nih.gov)

NIA - Joseph Ellis; Grants and Contracts Management Officer; National Institute on Aging;  
Gateway Building, Suite 2N212; Bethesda, MD 20892; Telephone: (301) 496-1472; FAX: (301)  
402-3672; Email: [ellisj@exmur.nia.nih.gov](mailto:ellisj@exmur.nia.nih.gov)

NIAAA - Ms. Linda Hilley; Grants Management Officer; National Institute on Alcohol Abuse and  
Alcoholism; 6000 Executive Blvd., Suite 504; Bethesda, MD 20892-7003; Telephone: (301) 443-  
4704; Fax: (301) 443-3891; Email: [lh67b@nih.gov](mailto:lh67b@nih.gov)

NIAID - Linda Shaw; Grants Management Branch; National Institute of Allergy and Infectious  
Diseases; 6003 Executive Boulevard, Room 4B-31; Rockville, MD 20850; Telephone: (301) 402-  
6611; FAX: (301) 480-3780; Email: [ls15k@nih.gov](mailto:ls15k@nih.gov)

NIAMS - Sally A. Nichols; Grants Management Branch; National Institute of Arthritis and Musculoskeletal and Skin Diseases; 6500 Center Drive, Room 5AS-49F; Bethesda, MD 20892-6500; Telephone: (301) 594-3535; FAX: (301) 480-5450; Email: [nicholss@mail.nih.gov](mailto:nicholss@mail.nih.gov)

NICHD - Mary Ellen Colvin; Grants Management Branch; National Institute of Child Health and Human Development; Building 61E, Room 8A17; Bethesda, MD 20892-7510; Telephone: (301) 496-1303; FAX: (301) 402-0915; Email: [MC113B@nih.gov](mailto:MC113B@nih.gov)

NIDA - Gary Fleming, J.D., M.A.; Grants Management Branch; National Institute on Drug Abuse; 6001 Executive Boulevard, Room 3131, MSC 9541; Bethesda, MD 20892-9541; Telephone: (301) 443-6710; FAX: (301) 594-6847; Email: [gf6s@nih.gov](mailto:gf6s@nih.gov)

NIDCD - Sharon Hunt; Grants Management Branch; National Institute on Deafness and Other Communication Disorders; 6120 Executive Boulevard, Room 400-C, MSC 7180; Bethesda, MD 20892-7180; Telephone: (301) 402-0909; FAX: (301) 402-1758; Email: [sharon\\_hunt@nih.gov](mailto:sharon_hunt@nih.gov)

NIDDK - Nancy Dixon; Grants Management Officer; National Institute of Diabetes and Digestive and Kidney Diseases; 45 Center Drive, Room 6AS49K, MSC 6600; Bethesda, MD 20892-6600; Telephone: (301) 594-8854; FAX: (301) 480-4237; Email: [dixonnn@extra.niddk.nih.gov](mailto:dixonnn@extra.niddk.nih.gov)

NIDCR - Kevin Crist; Division of Extramural Research; National Institute of Dental and Craniofacial Research; Natcher Building, Room 4AS 55; Bethesda, MD 20892-6402; Telephone: (301) 594-4800; FAX: (301) 480-8301; Email: [Kevin.Crist@nih.gov](mailto:Kevin.Crist@nih.gov)

NIEHS – Dorothy Duke; Division of Extramural Research and Training; National Institute of Environmental Health Sciences; P.O. Box 12233, Mail Drop EC-22; Research Triangle Park, NC 27709; Telephone: (919) 541-1373; FAX: (919) 541-2860; Email: [Duke3@niehs.nih.gov](mailto:Duke3@niehs.nih.gov)

NIGMS - Antoinette Holland; Grants Management Specialist; National Institute of General Medical Sciences; 45 Center Drive, Room 2AN-50B, MSC 6200; Bethesda, MD 20892-6200; Telephone: (301) 594-5132; FAX: (301) 480-2554; Email: [hollanda@nigms.nih.gov](mailto:hollanda@nigms.nih.gov)

NIMH - Michael J. Loewe; Grants Management Specialist; National Institute of Child Health and Human Development (Service Center for NIMH); 6100 Executive Boulevard, Room 8A17J; 6100 Executive Boulevard MSC 7510; Bethesda Maryland 20892-7510; Telephone: (301) 435-7008; FAX: (301) 402-0915; email: [ml70m@nih.gov](mailto:ml70m@nih.gov)

NINDS - Brenda Kibler; Grants Management Specialist; National Institute of Neurological Disorders and Stroke; Federal Building, Room 1004; Bethesda, MD 20892; Telephone: (301) 496-7441; FAX: (301) 402-0219; Email: [bk29j@nih.gov](mailto:bk29j@nih.gov)

NLM - Dwight Mowery; Extramural Programs; National Library of Medicine; 6705 Rockledge Drive, Suite 301; Bethesda, MD 20871; Telephone: (301) 496-4221; FAX: (301) 402-2952; Email: [moweryd@mail.nlm.nih.gov](mailto:moweryd@mail.nlm.nih.gov)

## AUTHORITY AND REGULATIONS

This program is described in the Catalog of Federal Domestic Assistance Nos. 93.394, 93.395, 93.396, 93.306, 93.867, 93.172, 93.837, 93.838, 93.839, 93.866, 93.273, 93.855, 93.856, 93.846, 93.864, 93.865, 93.929, 93.279, 93.173, 93.121, 93.847, 93.848, 93.849, 93.113, 93.821, 93.859, 93.862, 93.242, 93.853, 93.854, 93.361, and 93.879. Awards are made under authorization of the Public Health Service Act, Sec. 301, Title IV, Part A (Public Law 78-410, as amended by Public Law 99-158, 42 USC 241 and 285). Awards will be administered under PHS grants policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74 and Part 92. This program is not subject to the intergovernmental review requirements of Executive Order 12372 or Health Systems review. Awards will be administered under PHS grants policy as stated in the NIH Grants Policy Statement (October 1, 1998).

The PHS strongly encourages all grant and contract recipients to provide a smoke- free workplace and promote the non-use of all tobacco products. In addition, Public Law 103-227, the Pro-Children Act of 1994, prohibits smoking in certain facilities (or, in some cases, any portion of a facility) in which regular or routine education, library, day care, health care or early childhood development services are provided to children. This is consistent with the PHS mission to protect and advance the physical and mental health of the American people.

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